SYMBOL DE-MAPPING METHODS IN MULTIPLE-INPUT MULTIPLE-OUTPUT SYSTEMS

ABSTRACT

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In a multiple-input multiple-output (MIMO) system, multiple receive antennas produce a received signal vector, Y, which includes an element for each of the receive antennas. In an embodiment of a de-mapping method performed within a MIMO receiver, a quadrature phase shift keying (QPSK) search is performed

10 within a search space that includes the full constellation of symbol points. Based on the results of the QPSK search, the search space is reduced to fewer than all of the quadrants, and the received signal vector data is scaled and transformed to the reduced search space. A lower-level QPSK search is performed, and the process is repeated until the modulation order is reduced to a QPSK constellation. Hard or

15 soft decisions corresponding to the search results may then be passed to a decoder.